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595 MINER ROAD
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/905,418
Filing Date: July 13, 2001
Appellant(s): KULKARNI ET AL.

Thomas E. Kocovsky, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 18, 2007 appealing from the Office action mailed November 17, 2006.

(1) Real Party in Interest

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

The amendment after final rejection filed on January 18, 2007 has not been entered.

See 37 C.F.R §41.33

§ 41.33 Amendments and affidavits or other evidence after appeal.
(a) Amendments filed after the date of filing an appeal pursuant to § 41.31(a)(1) through (a)(3) and prior to the date a brief is filed pursuant to § 41.37 may be admitted as provided in § 1.116 of this title.
(b) Amendments filed on or after the date of filing a brief pursuant to § 41.37 may be admitted:
(1) To cancel claims, where such cancellation does not affect the scope of any other pending claim in the proceeding, or
(2) To rewrite dependent claims into independent form.
(c) All other amendments filed after the date of filing an appeal pursuant to § 41.31(a)(1) through (a)(3) will not be admitted except as permitted by §§ 41.39(b)(1), 41.50(a)(2)(i), 41.50(b)(1) and 41.50(c).
(d)
(1) An affidavit or other evidence filed after the date of filing an appeal pursuant to § 41.31(a)(1) through (a)(3) and prior to the date of filing a brief pursuant to § 41.37 may be admitted if the examiner determines that the affidavit or other evidence overcomes all rejections under appeal and that a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented has been made.

(2) All other affidavits or other evidence filed after the date of filing an appeal pursuant to § 41.31(a)(1) through (a)(3) will not be admitted except as permitted by §§ 41.39(b)(1), 41.50(a)(2)(i) and 41.50(b)(1).

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,742,060	Ashburn	04-1998

Wang, C. "Potential Use of Extensible Markup Language for Radiology Reporting: A Tutorial." RadioGraphics, vol. 20, No. 1, January-February 2000, pp. 287-293. (**WANG**)

Clunie, David A, "Dicom Structured Reporting" PixelMed Publishing, 2000, pages 295-324. (**CLUNIE**)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-8, 10-11, 14-15 and 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashburn (US Patent 5,742,060) in view of Wang et al. (*Potential Use of Extenisble Markup Language for Radiology Reporting: A Tutorial,* RadioGraphics Jan-Feb 2000, Volume 20, Pgs 287-293.)

Regarding claims 1-2, Ashburn discloses a nuclear camera system (Figure 2) comprising:

A detector (element 200) which acquires radionuclide event data;

An image processor (element 450) which processes the event data to produce image data;

An image data storage medium (element 614) which stores the image data; and

An image data processor which formats the image data for storage on the storage medium in a format that is compatible with existing imaging cameras and also in a format that can be readily delivered over the web or internet or data link (column 23, line 61- column 24, line 14). Ashburn does not explicitly state that the image processor processes the data into an open and extensible format. However, Wang et al discloses XML to report/store radiological imaging information (Page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility,

structure, and data checking..." (Page 288). Further XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). Because Ashburn teaches processing the image data in a format that is compatible with existing imaging cameras, one of ordinary skill in the art would be motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the universality of the image data so that it can be more easily viewed/or used from one imager to another.

Regarding claim 3, Wang discloses that XML is self descriptive or self defining (See page 287).

Regarding claims 4-5, Wang discloses using format definitions or data element definitions (Page 288) for associating various pieces of image data.

Regarding claims 6-8, Wang and Ashburn both disclose saving images in files, but do not explicitly state using pointers to point to a file/address/URL, however pointers are well known and conventional programming elements used to address files.

Regarding claims 10-11, Ashburn further discloses a control data/calibration parameter storage medium to an acquisition controller that stores control data/calibration parameters (column 24, lines 60-67). Ashburn does not explicitly state that the acquisition controller stores the data into an open and extensible format. However, Wang et al discloses XML to report/store radiological imaging information (Page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities

into web clients..." (Page 288). Because Ashburn teaches processing the image data in a format that is compatible with existing imaging cameras, one of ordinary skill in the art at the time the invention was made would have been motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the universality of the control data/calibration parameters so that the image data can be more easily manipulated/corrected from one image data set to another.

Regarding claims 14-15, Ashburn discloses a radiation based diagnostic imaging system (figure 2) including:

A detector which acquires radiation data (element 200);

An image processor which processes the radiation data to produce image data (element 450);

a control data/calibration parameter storage medium to an acquisition controller that stores control data/calibration parameters (column 24, lines 60-67); and

An acquisition controller which controls the acquisition of the radiation data (element 400).

Ashburn does not explicitly state that the acquisition controller stores the data into an open and extensible format. However, Wang et al discloses XML to report/store radiological imaging information (Page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). Because Ashburn teaches processing the image data in a format

that is compatible with existing imaging cameras, one of ordinary skill in the art at the time the invention was made would have been motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the universality of the control data/calibration parameters so that the image data can be more easily manipulated/corrected from one image data set to another.

Further, Ashburn and Wang to do explicitly state that the acquisition controller executes a script using an XML file to control the acquisition of radiation data. However, it would be obvious to one having ordinary skill in the art at the time the invention was made to have use XML files to execute all programs within the imager in order to increase the ease by which data can be transferred from one imager to another.

Regarding claim 20, Ashburn disclose a diagnostic imaging system including:

A detector which acquires diagnostic data (element 200);

An image processor which processes the diagnostic data to produce image data (element 450);

An acquisition controller which controls the acquisition of the diagnostic data (element 400);

A control data/calibration parameter storage medium to an acquisition controller that stores control data/calibration parameters (column 24, lines 60-67);

An image data storage medium (element 614) which stores the image data; and

A server (element 602 and column 6, lines 13-16) coupled to the control data storage medium (column 24, lines 60-67) and the image data storage medium (element 614) which

server accesses at least one of the control data files and image data files and executes scripts which utilize control data files.

Ashburn does not explicitly state that all of the data and scripts are in an open and extensible format. However, Wang et al discloses XML to report/store radiological imaging information (Page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). Because Ashburn teaches processing the image data in a format that is compatible with existing imaging cameras, one of ordinary skill in the art at the time the invention was made would have been motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the universality of the collected data so that it can be more easily manipulated/corrected from one image data set to another.

Regarding claim 21, Ashburn discloses a nuclear camera system (Figure 2) comprising:

A detector (element 200) which acquires radionuclide event data;

An image processor (element 450) which processes the event data to produce image data;

a control data/calibration parameter storage medium to an acquisition controller that stores control data/calibration parameters (column 24, lines 60-67); and

An acquisition controller which controls the acquisition of the radiation data (element 400).

Ashburn does not explicitly state that the acquisition controller stores the data into an open and extensible format. However, Wang et al discloses XML to report/store radiological imaging information (Page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). Because Ashburn teaches processing the image data in a format that is compatible with existing imaging cameras, one of ordinary skill in the art at the time the invention was made would have been motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the universality of the control data/calibration parameters so that the image data can be more easily manipulated/corrected from one image data set to another.

Regarding claim 22, Ashburn discloses a nuclear camera system (Figure 2) comprising:

A detector (element 200) which acquires radionuclide event data;

An image processor (element 450) which processes the event data to produce image data;

a control data/calibration parameter storage medium to an acquisition controller that stores control data/calibration parameters (column 24, lines 60-67); and

An acquisition controller which controls the acquisition of the radiation data (element 400); and

A user interface (column 6, lines 7-23) and a server (element 602 and column 6, lines 13-16), responsive to the user interface and coupled to the control data storage medium and image data storage medium, which responds to user command that executes scripts.

Ashburn does not explicitly state that all of the data and scripts are in an open and extensible format. However, Wang et al discloses using XML to report/store radiological imaging information (Page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). Because Ashburn teaches processing the image data in a format that is compatible with existing imaging cameras, one of ordinary skill in the art at the time the invention was made would have been motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the universality of the collected data so that it can be more easily manipulated/corrected from one image data set to another.

Regarding claims 23-25, Ashburn discloses a method of acquiring nuclear medicine images (figure 2) comprising:

Acquiring emission data from an imaged subject (element 200);

Processing the emission data to produce image data (element 450);

Storing the image data (element 614); and

Wherein the image data is stored in a format that allows for such incorporation of new user data format requirements (column 23, line 61- column 24,line 14).

Ashburn does not explicitly state the step of incorporating new user data format requirements into the processing data without requiring a manufacturer's proprietary image format convention routine. However, Wang discloses using XML to report/store radiological

information (page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). Further, Wang discloses incorporating additional reports into the data that is not in the format of the imager (Pages 289-290). One of ordinary skill in the art would be motivated to use the step as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the flexibility with which the data can be manipulated.

Regarding claims 26-27, Ashburn disclose a medical imaging system (figure 2) comprising:

Means for acquiring emission data from an image subject means for processing the emission data to produce image data (element 200);

Means for storing the image data (element 450); and

Wherein the image data is stored in a format that allows for such incorporation of the new user data form at requirements (column 23, line 61- column 24, line 14).

Ashburn does not explicitly state the step of incorporating new user data format requirements into the processing data without requiring a manufacturer's proprietary image format convention routine. However, Wang discloses using XML to report/store radiological information (page 287). Further, XML is a known computer language that was developed in 1997 and is a well known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). Further, XML is attractive for it ability to "incorporate distributed software modules that embed powerful data manipulation capabilities

into web clients..." (Page 288). Further, Wang discloses incorporating additional reports into the data that is not in the format of the imager (Pages 289-290). One of ordinary skill in the art would be motivated to use the step as disclosed by Wang with the invention as disclosed by Ashburn in order to increase the flexibility with which the data can be manipulated.

(10) Response to Argument

The References

Applicant Argues that the Ashburn reference does not "recognize these deficiencies, much less provide the reader with a motivation to look for solutions to these problems." In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant also argues that the Wang reference is directed to a report generator as a data entry form usable/transmittable to various locations. Applicant also argues that the Wang reference still uses proprietary image formats. This is an overly limited interpretation of the Wang reference. Wang does disclose that particular application, however it is not limited simply to data reporting using fillable forms, but rather to processing/transferring various types of patient information. Wang discloses using DICOM, a standard that specifies "a non-proprietary data interchange protocol, digital image formal and file structure for biomedical images and image related information." (see page 292, right column, First full paragraph). Thus applicant' argument that Wang's reference is limited to being a report generator with fillable forms is not persuasive.

Applicant further argues that the present application fulfills a long felt but unmet need, and the Wang reference only recognizes the need, but does not fulfill it. The examiner disagrees, with applicant's characterization of the reference, as Wang identifies the long felt need of needing a universal image data file/processor for easier data transfer and manipulation (see page 292, right column, First full paragraph). Further, the failure to solve a long-felt need may be due to factors such as lack of interest or lack of appreciation of an invention's potential or marketability rather than want of technical know-how. Scully Signal Co. v. Electronics Corp. of America, 570 F.2d 355, 196 USPQ 657 (1st. Cir. 1977). As applicant has stated, conventional imagers such as the one disclosed by Ashburn, disclose using proprietary software to handle/process imaging data. Even if Wang is interpreted to not fulfill the long felt need, the failure to fulfill the unmet need may be due to factors such as lack of marketability (i.e. untrained users would be afraid to use the open language program for fear of damaging/erasing image data) rather than the want of technical know-how (the technical know-how is well-known, as .xml files have been widely used in data applications at least since 1999).

The Invention and References

The crux of applicant's invention is that it is an imaging camera that outputs and stores imaging data as in an open and extensible format (XML is one type of open and extensible format).

The Ashburn reference discloses the conventional imaging cameras that output and store imaging data using a proprietary type of format.

The Wang reference teaches outputting and storing radiological or imaging data in XML format to "communicate imaging information to aid in making decisions regarding patient care"

(Page 288, first paragraph). Wang further differentiates from prior art formats, such as the conventional HTML format, because HTML only allows a single fixed type of document and because it often results in incompatibilities among different devices (see page 288, 3rd paragraph). Wang further highlights that the use of XML is attractive because of its ability to allow information systems from different vendors at different sites and on different platforms to communicate with one another (see 288 first paragraph).

Applicant's arguments

Arguments Regarding Independent Claim 1

Regarding claim 1, applicant argues that there is no motivation to modify the invention as disclosed by Ashburn with the invention as disclosed by Wang because such a combination *can* result in problems/mistakes in the data collected. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Wang reference provides ample motivation for combining the references. XML provides a well-known computer language that "preserves key feature - extensibility, structure, and data checking..." (Page 288). And is attractive for its ability to "incorporate distributed software modules that embed powerful data manipulation capabilities into web clients..." (Page 288). The key features disclosed by Wang make XML an ideal image conversion format. Ashburn teaches processing the image data in a format that is

compatible with existing imaging cameras and does not explicitly disclose XML, however processing image data in XML is disclosed by Wang. One of ordinary skill in the art would be motivated to use the conventional XML format as disclosed by Wang with the invention as disclosed by Ashburn, as XML provides a means for transmitting universally understandable documents (see abstract of Wang).

Further, regarding claim 1, applicant argues that the Wang reference provides no ability to store image data and further argues that DICOM is not an open and extensible format. The examiner disagrees, Wang discloses storing image data (see page 292, second column, first full paragraph) and that DICOM is a format expressed that can be expressed in XML (see newly cited Clunie reference, page 309).

Arguments regarding independent claims 14 and 20-22

Applicant argues that neither reference discloses controlling the acquisition of data using and XML file. However, Ashburn discloses a conventional controller for executing data acquisition (see column 24, lines 60-67 and element 400), but does not specify using the particular open and extensible (XML) format to execute such command. However, Wang teaches that XML is a well-known format for various reasons (See above paragraphs). Thus, it obvious to one having ordinary skill in the art, at the time the invention was made, to have used the XML script disclosed by Wang with the acquisition controller disclosed by Ashburn in order to maintain uniformity in the data acquired.

Arguments regarding claim 23 and 26

Applicant argues that there is no motivation to alter the proprietary data format used by conventional imaging devices (such as the one disclosed by Ashburn). However, the examiner

respectfully disagrees. Wang provides ample motivation as the Wang reference teaches outputting and storing radiological or imaging data in XML format to "communicate imaging information to aid in making decisions regarding patient care" (Page 288, first paragraph). Wang further differentiates from prior art formats, such as the conventional HTML format, because HTML only allows a single fixed type of document and because it often results in incompatibilities among different devices (see page 288, 3rd paragraph). Wang further highlights that the use of XML is attractive because of its ability to allow information systems from different vendors at different sites and on different platforms to communicate with one another (see 288 first paragraph).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Christine Sung

DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Conferees:

David Porta

Drew Dunn